

Application No. 09/894,375

NANS 1000-2

In the claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) The method of manufacture of thin film magnetic disks and other planar magnetic memory devices of the type which include a substrate which carries a thin magnetic film deposited on the surface of an electroless plated nickel alloy layer, the improvement comprising the steps of providing a metal substrate having a surface characterized by chemical and mechanical variations resulting from smoothing processes and with an average surface roughness of about 30 Angstroms, or smoother, and vacuum-sputter deposition of a thin metallic layer onto the surface of the substrate, said thin metallic layer selected to bind to the substrate, thereby masking said chemical and mechanical variations ~~of the substrate~~, and to reactively or catalytically nucleate the electroless plating of said nickel alloy in a subsequent wet chemistry step.

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2. (currently amended) The method of claim 1 in which the substrate is an aluminum alloy, and includes depositing ~~and the nickel alloy layer is a nickel-phosphorus alloy deposited by an electroless plating process.~~

3. (original) The method of claim 1 in which the reactive nucleating layer is a sacrificial reactive metallic layer of zinc.

4. (original) The method of claim 1 in which the catalytically nucleating metallic layer is a non-magnetic nickel-phosphorus alloy or a non-magnetic alloy of iron or of cobalt or of nickel in combination with singly or multiply added alloying materials.

5. (currently amended) The method of claim 1 in which said nucleating metallic layer comprises a first thin non-magnetic binder layer which bonds to the substrate and thereby presents a new and uniform chemistry and mechanical structure different from that of the substrate and a top second non-magnetic thin layer which bonds to the first

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layer and which nucleates the electroless plating of the nickel alloy either reactively, or catalytically.

6. (original) The method of claim 5 in which the thin binder layer is selected from the group comprising chromium, titanium, alloy mixtures of chromium and titanium, alloy mixtures of chromium and vanadium, alloy mixtures of titanium and tungsten and other metallic mixtures or elements known as promoters of adhesion.

7. (original) The method of claim 5 in which said binder layer is selected from the group comprising zirconium, niobium, rhenium, vanadium, molybdenum, tungsten, chromium, nickel, copper, titanium, silicon or alloy combinations of these elements.

8. (original) The method of claims 1 or 5, wherein said substrate is an aluminum alloy.

9. (cancelled)

10. (original) The method of claims 1 or 5 in which the substrate is a light-weight high-strength metal selected from the group of magnesium and its alloys or titanium and its alloys or other non-magnetic alloys as typified by beryllium copper, manganese steel and certain austenitic stainless steels.

11-12. (cancelled)

13. (original) The method of claims 1 or 5 wherein said substrate has a first side and a second side, and said nucleating layer is applied to only said first side of said substrate.

14. (original) The method of claim 1, wherein the average surface roughness is about 20 Angstroms or less.

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15 - 31. (cancelled)

32. (new) The method of claim 1, wherein said providing includes using cold work techniques to smooth the surface of the substrate.

33. (new) The method of claim 1, including electrolessly plating a layer of said nickel alloy on said thin metallic layer, and polishing said layer of said nickel alloy.

34. (new) The method of claim 1, including electrolessly plating a layer of said nickel alloy on said thin metallic layer, polishing said layer of said nickel alloy, forming a chromium layer on said layer of nickel alloy, and forming a magnetic layer on said chromium layer.

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